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ABSTRACT

This paper describes the results cf some same-college-age peer tutoring experiments. It is based on a theoretical model that calls for greater satisfaction and performance to result from being assigned the role of tutor than of tutee, and under equitable (status-congruent) rather than inequitable conditicns. Same-sex tutoring pairs were formed of 94 Grade 6 students functioning at fourth-sixth grade math levels, such that the randomly assigned tutor initially had great competence (the equitable conditicn), equal or lower competence than the tutee. Tutors were trained and tutored daily for three days each week in math. Following a review session on the fourth day, each took a math test and completed an attitudinal questionnaire. After two weeks, the partners exchanged roles. Two types of analyses, one based on differences between successive pairs of weeks, th other invclving differences between the last two weeks combined and the first two, produced significant support for the theoretical model. The results indicate that where same-age peer tutoring is employed in the public school classroom, (change in) role status and level cf equity affect relative performance and morale of both tutors and tutees. (Author)

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MORALE AND PERFORMANCE OF SAME-AGE PEER TUTORING PARTNERS AS A FUNCTION OF RELATIVE STATUS AND EQUITY

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This four-week experiment, conducted under grant for NIE (G74-0023), generalizes to the public school classroom the results of some same-college-age peer tutoring experiments. It is based on a theoretical model that calls for greater satisfaction and performance to result from being assigned the role of tutor than of tutee, and under equitable (status-congruent) rather than inequitable conditions. Same-sex tutoring pairs were formed of 94 "sixth grade" students functioning at 4th to 6th grade math levels, such that the randomly assigned tutor initially had great competence (the equitable condition), equal or lower competence than the tutee. Tutors were trained and tutored daily for three days each week in math. Following a review session on the 4th day, each took a math test and completed an attitudinal questionnaire. After two weeks, the partners exchanged roles. Two types of analysis, one based on differences between successive pairs of weeks, the other involving differences between the last two weeks combined and the first two, produced significant support (overall $p<.001$) for the theoretical model. The results indicate that where same-age peer tutoring is employed in the public school classroom, (change in) role status and level of equity affect relative performance and morale of both tutors and tutees.

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This paper is concerned with an anomalous kind of helping relationship--anomalous in the sense that the beneficiary may look upon the helper's role not only as more attractive than his or her own, but also as one that by all rights should have been his or hers. It has been suggested that a needy person may refuse help, if accepting it would imply an acknowledgment that the donor had superior status, and that the donor might impose future demands. There is also evidence that a potential recipient would refuse help from a disliked benefactor, even if an opportunity to repay in the future, and thus restore equity, existed (Clark, Gotay, & Mills, 1974). What, however, if the potential beneficiary is not in a position to refuse help? How will he or she respond?

Some of the thinking on status congruence provides a partial answer. Status congruence means that an individual's position or rank on an evaluative dimension is similar to, or positively correlated with, that individual's ranks on other relevant evaluative dimensions on which are based the existing set of status relationships in a group. In a number of experiments by other investigators, status-congruent groups were composed such that the person with the more central or influential position had relatively higher task competence, whereas in the status-incongruent groups, the less competent members were assigned to the more influential positions. It is clear that this particular operationalization of status congruence is equivalent to an equity manipulation. By and large their results are uniform in showing that status-congruent task groups perform better than status-incongruent groups. Sampson (1969) argues that this is so because the members of status-congruent groups are better able to know what to expect of one another. There

is no uniformity, however, regarding the effects of status congruence on members' attitudes toward the group experience. Sampson, drawing in part on a dissertation by Kardush (1968), maintains that members would find status congruence less satisfying than incongruence, in those situations that minimize market-place conditions. While this proved to be the case, Sampson fails to deal with the further findings in the Kardush experiment--that team members assigned the most peripheral roles were less satisfied than were their counterparts, regardless of whether the groups were status-congruent.

We approached these issues in the context of same-age peer-tutoring. This classroom context is particularly appropriate since, in addition to the competitive element that the classroom lends, peer tutoring involves a special kind of helping relationship in which one student is directed to tutor a classmate who may not necessarily regard the tutor as having superior task competence.

Our theoretical model (Rosen, Powell, & Schubot, 1977) essentially called for greater performance and satisfaction to result from being a tutor rather than a tutee, and from being in a status-congruent, rather than a status-incongruent relationship.

That model was first applied, with success, in a pair of experiments on same-college-age, same-classroom peers. The results led us to ask whether the model would generalize to the public school classroom. We were also concerned with determining whether the model would remain valid if we were to establish a long-term tutoring relationship in a natural setting, instead of following the tradition of setting up a relatively transitory set of relationships in the laboratory, where the effects obtained could well be due to stimulus novelty and to the

perception that the relationship would be short-lived. Finally, our college paradigm had called for subsequent exchange of roles in only half of the tutor-tutee pairs. We decided to change this paradigm for the purpose of maintaining student morale and interest. The new paradigm involved subsequent role exchange in all tutor-tutee pairs.

The change model that underlies the new paradigm basically assumes that a change in tutorial status from being the tutor to being the tutee and a change from a status-congruent relationship to one of status incongruence, would result in a decrement in both performance and satisfaction. The complementary changes would result in improved performance and increased satisfaction. In the interest of clarity, let me outline the earlier, simpler model that we constructed. A hypothetical "desirability" weight of (-3) was given for tutors who later became tutees and of (+3) for those in the tutee-tutor sequence. With regard to equity or status congruence, a weight (-2) was applied to the more competent tutor who later became tutee, or to the less competent tutee who became tutor. A weight of (0) was used where the equally competent tutor became tutee, or vice versa. A weight of (+2) was applied to the more competent tutee who then became tutor, or the less competent tutor who became tutee. The theoretical weights derived separately for the role sequence dimension, and the equity dimension, were then combined additively. Their sums are shown in Table 1 of the handout.

Method

Sixth-grade students (N=104) in four classes of mathematics were recruited initially. Five pairs were lost through attrition, leaving 47 same-sex pairs for analysis.

The study lasted four weeks with daily tutor training and tutoring in the regular calssrooms. In each 50-minute period, the classes were divided so that all tutors could be trained for 15-20 minutes on the day's materials, while their tutees practiced review materials.

Each Friday, achievement tests on the week's materials and satisfaction questionnaires were administered to all the participants. The non-standardized math tests were each composed of 20-25 items. The questionnaire was composed of Likert-type scales dealing with perceptions of own performance, relative feelings of enjoyment, importance, usefulness, being the boss, pride, desire to swtich jobs, and feelings of indebtedness.

Same-sex students were paired such that their relative previous achievement in mathematics was equal (same letter grade) or unequal (one letter grade apart). Role sequence was then randomly assigned within each pair. This procedure eventuated in 13 pairs with a superior initial tutor, 16 equal competence pairs, and 18 paris with an inferior initial tutor.

On Day 1 of the first week, each student was given a note naming his (her) partner, their respective roles, and an indication of their relative math competencies to date (namely, as having performed "higher than," "about the same as," or "lower than" their partner). At the outset of the third week they received a second note, which informed them that roles would now be exchanged. We also reinforced the relative competence manipulation. Manipulation checks showed that this information was understood and retained by all.

Results

The data points on a given measure entailed subtracting the scores or ratings of the first two weeks combined from the appropriate combined

values of the last two weeks. I would like to call your attention again to the six theoretical weights that are shown in Table 1. For present use, we derived a somewhat different set of six weights from a more elaborate (18-weight) model. The new weights (see parenthetical values in Table 1) have a wider range but have the same ordinal relationship to one another as the ones shown. These new weights were applied as coefficients in one operation to the entire set of obtained means, and using a multivariate analysis of variance extension of the method of contrasts.

The overall multivariate contrast was significant at beyond the .001 level [$F(9, 80) = 8.86$]. The univariate F's from the multivariate contrast analysis are presented in Table 2 of the handout. With regard to actual performance on the weekly acheivement tests, it is perhaps not too surprising that the differences fell short of significance, given the ad hoc nature of the test items. Incidentally, these test results led us to plan a replication in which items would be selected from test materials appearing in the teacher's manuals of the texts from which the tutoring lessons were drawn.

Returning to our present data, it is clear that, by and large, changes in felt satisfaction and in perception of own performance are directly affected, as predicted, by changes in assigned role and of status congruence. Our more elaborate theoretical model which took weekly changes into account produced essentially the same results [$F(9, 138) = 7.847$, $p < .001$]. For purposes of illustration, standardized weekly means reflecting subjects' expressed desire to switch or retain their jobs as a function of role sequence are shown in Figure 1 of the handout. That crossover is characteristic of all the dependent variables, including those that failed to reach significance.

Table 3 shows the standardized sets of change score means for each dependent variable. If you compare the means for a given measure with the appropriate weights shown in Table 1, you will note that the superior tutors who became tutees are consistently those who became most dissatisfied. The order of obtained means in the tutor-tutee sequence does, by and large, fit the model better than does the order of means in the tutee-tutor sequence. It isn't at all clear why the superior tutee who became tutor did not become the most satisfied of all persons.

Discussion and Conclusions

Let me say that the success of the model was affected more by the role sequence factor than by the status congruence factor. This is undoubtedly due, in part, to the fact that students in the unequal competence pairs were deliberately selected, again in the interests of morale, so as not to be too discrepant from one another, and to lend an aura of ecological validity for the benefit of the participants of this field experiment.

It is satisfying to note that theories dealing with the effects of status variables, and which have been proven out in transitory laboratory conditions, also have validity in the real world of the public school. Positive changes, at least in perceived performance, and certainly changes in satisfaction, do appear to operate in tandem rather than at cross-purposes, as a result of being a tutor than a tutee, and of being in an equitable rather than an inequitable role relationship.

Table 1

Hypothetical Weights for Change Model

Role Sequence	Initial Tutor's Pretest Competence Relative to Initial Tutee's			
	Greater	Equal	Less	Total
Tutor-tutee	-5.0 (-8.5)	-3.0 (-4.5)	-1.0 (-.5)	-9.0 (-13.5)
Tutee-tutor	+1.0 (+.5)	+3.0 (+4.5)	+5.0 (+8.5)	+9.0 (+13.5)
TOTAL	-4.0 (-8.0)	0 (0)	+4.0 (+8.0)	

Note. The "greater competence" column corresponds to an initial status congruent (or equitable) relationship and a subsequent status incongruent relationship. The "less competent" column is the complement of the "greater" column. The "equal" column reflects a weak state of status incongruence, which does not change with role exchange. The weights outside the Parentheses are those representing the early, simpler model. Those in parentheses are the actual weights used in the analysis; they were derived from a more elaborate (18-weight) model discussed in the text.

Table 2

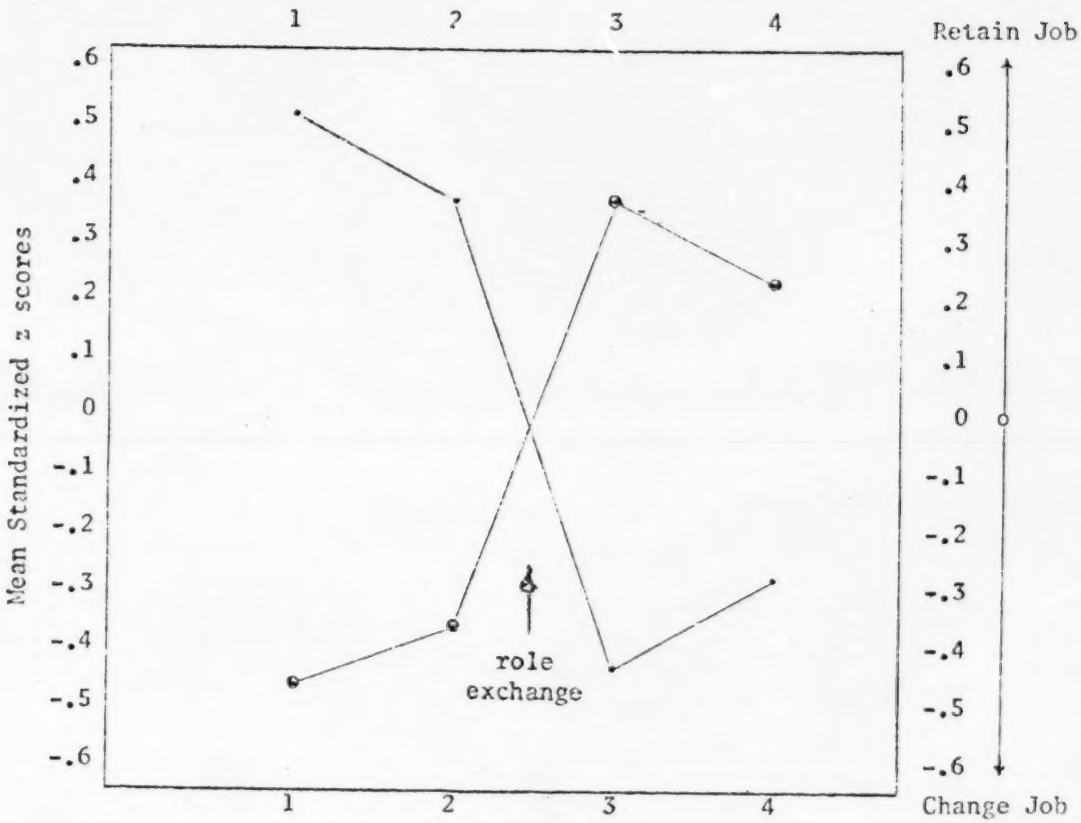
Univariate F's from Multivariate Change Score Contrast Analysis

Dependent Measures	F(1, 88)	p
1. (Perceived) Own Posttest Performance	5.511	.05
2. Own Enjoyment	<1	NS
3. Important	8.641	.01
4. Useful	3.102	.10
5. The Boss	38.169	.01
6. Proud	2.246	.20
7. Own Desire to Switch	33.047	.01
8. Own Felt Indebtedness	<1	NS
9. Actual Test Performance	2.080	.20

Figure 1

Desire to Retain Job

Sequence x Weeks Standardized Scores



• = tutor-tutee sequence

● = tutee-tutor sequence

Increasing positive scores represent increasing desire to retain job.

Table 3

Means of Standardized Change Scores

(Weeks 3 and 4 combined minus Weeks 1 and 2 combined)

Dependent Variable	Sequence	Initial Tutor's Competence Relative to Tutee's		
		Greater	Equal	Lesser
1. (Perceived) Own Performance	RE[a]	-2.00	-1.31	-1.33
	ER	.23	.38	-.67
2. Own Enjoyment	RE	-1.62	-.88	-.61
	ER	.31	-.81	-.83
3. Important	RE	-3.23	-1.69	-2.11
	ER	1.92	.25	-.72
4. Useful	RE	-1.62	-1.00	-1.11
	ER	.85	.44	-.33
5. The Boss	RE	-3.77	-2.44	-1.83
	ER	3.15	3.13	3.66
6. Proud	RE	-1.85	-.75	-.72
	ER	.54	.06	-.44
7. Own Desire to Switch[b]	RE	-4.08	-2.06	-.39
	ER	2.46	1.19	2.50
8. Own Felt Indebtedness	RE	.85	.25	.61
	ER	.23	2.06	.61
9. Actual Performance	RE	-.04	-.51	-.57
	ER	.09	1.08	.02

[a]RE = tutor-tutee sequence; ER = tutee-tutor sequence.

[b]Keyed in direction of low desire to switch.

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